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ABSTRACT

This paper investigates the student characteristics that underlie high and low ratings of different aspects of an undergraduate course in educational psychology. Four hundred sixty students were given a number of inventories, scales, and surveys and a 22-item rating instrument covering course content, methods of instruction, and instructor. Principal axis factor analysis of the course evaluation instrument yielded 6 factors accounting for 72.69 percent of the variance. Factor scores were computed for each subject on each factor. Multivariate analyses of variance revealed significant differences on student background and personality variables between students having high and low factor scores for 4 of the 6 factors. Discriminant functions were employed to identify student characteristics that discriminate maximally between high and low factor scores. (Author/AF)

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"Student Press": Student Course Ratings as a Function of Student Variables

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Introduction

Numerous studies have measured the environmental "press" of different educational institutions. Pace and Stern (1958), Thistlethwaite (1960), Holland (1959, 1960, 1965, 1966), and Astin (1965) investigated the "press" of various colleges and universities. Moreover, the "press" of different secondary school curricula has been determined by relating subjective teacher evaluations to student variables (Barclay, 1967). Patterns of variables of successful and unsuccessful students differed in different academic areas, indicating the presence of a culturally-transmitted, curricular-related institutional "press" or bias.

On the other hand, to some extent the environment of a college is determined by the needs of the students it admits. Pace (1962) estimated that 30 percent of the total press can be accounted for by student variables. A "student press" exists and is especially evident on our more troubled campuses where administrators and faculty are perplexed in trying to deal with the reality and the spector of what is called "student power."

Traditionally, students are evaluated by their instructor, and the instructor, in turn, is evaluated by someone higher in the academic hierarchy. Only recently we have grasped the importance of the feedback loop between student and teacher (McKeachie, 1968, 1969). However, as enrollments soar and classes become larger and larger, opportunities for informal dialogue and flexible educational strategy are reduced. Student apathy and militancy may be seen as a product of our burgeoning educational system and its one-way communication of information. Considerable reliance is now being placed on the development of formal instruments to insure a minimum degree of two-way interaction. Though the full effects have not

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yet been measured, students can now be said to possess a formal "press" upon the educational system. But before feedback of this nature should be utilized in instituting changes in educational strategy, one must be aware of the determinants of this student press, as understanding the evaluator helps in understanding the evaluation. Correlations between instructor evaluation and the personality characteristics of the evaluators were studied by Rezler (1965) and Yonge and Sassenrath (1968). Moreover, it should be noted that when an instructor is aware of the nature of differences among his students, his teaching may be more effective (Sturgis, 1958).

This study, reflecting this new student-centered trend and realizing that student prejudices may affect the learning atmosphere or classroom climate and learning itself, explores student preferences and tries to determine patterns of student variables that are associated with evaluating different aspects of both course and instructor.

The study was conducted in the context of the introductory course, *Human Development and Curriculum*, in the teacher-education program at the University of Kentucky. A social-learning approach to the classroom, a departure from the traditional approach of educational psychology, emphasizing the principles and application of behavior modification, was introduced at the beginning of the prior semester and, as evidenced by previous student ratings and informal feedback, has met both opposition and approbation. To better comprehend the nature of this feedback, the sources of "student press" or bias were investigated. A wide range of student characteristics was explored--motivational, attitudinal, and demographic -- and believed capable of influencing course evaluations.

Method

A comprehensive student rating instrument was developed and administered. Ratings of course content, methods of instruction (video-lecture, films, or discussion sessions), instructor and an overall course item were included. The instrument, as administered, is presented in Appendix A. All 20 seven-point scales were utilized in the study, as was the 60-item adjective checklist. Positive and negative adjectives were scored separately. Ten instructors, teaching a total of 16 sections, were evaluated.

In two sessions 460 students were given a number of inventories, scales and surveys. Included in the testing were 53 test and other variables. Measures such as Holland Vocational Preference Inventory (VPI), Liverant Goal Preference Inventory (GPI), Rokeach Dogmatism Scale, Marlowe-Crowne Social Desirability Scale and a demographic questionnaire were administered. Moreover, the Behavioral Survey, a behavioral measure consisting of forced choices between "required" articles and films that had either a behavioral or non-behavioral title and the Behavioral Science Scale, a short scale indicating acceptance or rejection of the behavioral sciences, were utilized. The latter two scales are presented in Appendix B and Appendix C.

A principle axis factor analysis of the matrix of intercorrelations of the 22 course evaluation items yielded six factors accounting for 72.69 percent of the total variance. Factors were interpretable in terms of course organization and reading materials. Brief descriptions of each factor follow.

I. Practical Audiovisual Presentation Factor. Once-a-week demonstration and application of theoretical principles.

II. Instructor Factor. Discussion sessions that meet twice each week with the same instructor.

III. Videotaped Lecture Factor. Once-a-week lecture presented by senior faculty.

IV. Readings Factor. Sundry articles that supplement materials in the textbooks.

V. Traditional Educational Psychology Text Factor. Traditional topics such as growth and development, intelligence, learning, and testing are presented.

VI. Social Learning Text Factor. Modern behavioral approach to classroom control and learning.

The items on the evaluation form which loaded 0.200 or higher on the six factors and the percent of variance for each factor is presented in Table 1. Factor scores were calculated for each subject on each factor.

Table 1

FACTOR STRUCTURE OF THE EVALUATION INSTRUMENT FOR 460 STUDENTS

SPRING 1970

FACTORS	I		II		III		IV		V		VI	
Factor Name and Percent of Variance	Practical Audio-visual Presentation Factor 28.86%		Instructor Factor 11.88%		Videotaped Lecture Factor 10.27%		Readings Factor 8.79%		Traditional Educational Psychology Text Factor 7.16%		Social Learning Text Factor 5.72%	
Variables with Loadings Over 0.200	15	.9211	18	.9326	1	-.8801	12	-.8868	6	-.8903	7	.8783
	16	.9002	17	.9056	2	-.7734	11	-.8437	8	-.8722	5	.8277
	14	.8398	19	.8312	4	-.3762	13	-.8067	10	-.8409	9	.7998
			20	.4515	3	-.2953	20	-.2566	20	-.2711	20	.2614
			21	.3681					5	-.2563		
									9	-.2037		

To determine the combination of student variables that would maximally discriminate between high and low factor scores, discriminant function analyses were utilized. Ten by two (instructors by levels of factor score) multivariate analysis of variance designs were employed to investigate the differences between instructors on each factor. The computer program developed by Finn (1968) was used to analyze the data.

Results

The F-ratios for the multivariate tests of equaltiy of mean vectors, with the instructor differences removed, were significant in four of the six analyses.(Table 2). Student variables were found to discriminate

Table 2

HIGH AND LOW FACTOR SCORES--
MULTIVARIATE TESTS OF EQUALITY OF MEAN VECTORS
(df = 16 and 239)

Factors	Multivariate F-ratios	P
I. Practical Audio-visual Presentation	1.4969	<0.1014
II. Instructor	2.1597	<0.0070
III. Videotaped Lecture	1.6052	<0.0652
IV. Readings	1.1007	<0.3550
V. Traditional Educational Psychology Text	1.2247	<0.2247
VI. Social Learning Text	1.8685	<0.0241

levels of the Practical Audiovisual Factor, the Instructor Factor, the Video-taped Lecture Factor and the Social Learning Textbook Factor. Step-down F's indicated that the differences were caused by a limited number of specific student variables. Table 3 represents the summary table for those analyses.

The Social Scale (VPI) differentiated high from low scores on the Practical Audiovisual Presentation Factor (I). The needs for Academic Achievement and Love and Affection (GPI), the Social and Artistic Scales (VPI) and Grade Point Average showed differences between levels of the Instructor Factor (II). The Infrequency (VPI) and Social Desirability Scales (Marlowe-Crowne) and the need for Academic Achievements (GPI)

distinguished high from low scores on the Videotaped Lecture Factor III, as did the Masculinity, Infrequency, Conventional and Intellectual Scales of the VPI and Grade Point Average for the Social Learning Text Factor (VI). Note that in the preliminary analysis of the data all but 16 personality variables were eliminated.

Table 3

STEP-DOWN F'S AND PROBABILITY LEVELS FOR FOUR SIGNIFICANT FACTORS

VARIABLES	FACTORS			
	I	II	III	VI
1. Unit Test Grade	2.3407, p<.1273	2.6780, p<.1030	1.6910, p<.1946	0.0458, p<.8307
2. Grade Point Ave.	1.2965, p<.2559	3.2593, p<.0722	1.8102, p<.1797	3.9683, p<.0475
3. Love & Affect.	0.0023, p<.9614	4.7536, p<.0302	0.6483, p<.4216	0.1546, p<.6946
4. Acad. Achieve.	1.8590, p<.1739	4.9849, p<.0265	2.7059, p<.1012	2.1813, p<.1409
5. Intellectual	0.0092, p<.9238	0.0166, p<.8976	0.6921, p<.4064	3.2751, p<.0716
6. Social	8.2811, p<.0044	4.6677, p<.0317	2.1744, p<.1416	3.0955, p<.0798
7. Conventional	1.9268, p<.1664	0.3058, p<.5809	0.1376, p<.7111	2.0998, p<.1486
8. Enterprising	0.0753, p<.7841	1.8843, p<.1711	0.0283, p<.8666	0.1814, p<.6706
9. Artistic	0.1812, p<.6708	8.2815, p<.0044	0.0749, p<.7846	1.3980, p<.2381
10. Self-control	2.2657, p<.1335	0.0602, p<.8065	0.4151, p<.5201	2.3073, p<.1301
11. Masculinity	1.5194, p<.2188	0.3428, p<.5589	0.0268, p<.8701	3.9270, p<.0487
12. Infrequency	0.9223, p<.3380	0.7473, p<.3883	7.7067, p<.0060	4.6345, p<.0324
13. Soc. Desirability	0.7845, p<.3768	0.4556, p<.5004	5.0214, p<.0260	0.0008, p<.9769
14. Behav. Sci. Scale	2.1179, p<.1469	0.8521, p<.3570	0.1606, p<.6891	0.3890, p<.5335
15. Behavioral Survey	0.1846, p<.6679	0.0634, p<.8015	1.2051, p<.2733	0.6416, p<.4241
16. Class	0.0817, p<.7753	0.5794, p<.4474	0.8010, p<.3718	0.9896, p<.3210

Classification or assignment of students into high or low factor groups is possible, since standardized discriminant function coefficients are provided (Table 4). The Social Scale (VPI), Unit Test Score, Self-control (VPI), Academic Achievement (GPI), Masculinity (VPI), Intellectual (VPI) and the Behavioral Science Scale provided large lambda weights for the first significant factor, the Practical Audiovisual Presentation Factor; Artistic (VPI), Love and Affection (GPI), Academic Achievement (GPI) and Grade Point Average

for the second, the Instructor Factor; Infrequency (VPI), Unit Test Score, Social Desirability (Marlowe-Crowne), Grade Point Average and Academic Achievement (GPI) for the third, the Videotaped Lecture Factor; and, Social (VPI), Masculinity (VPI) , Self-control (VPI), and Infrequency (VPI) for the fourth, the Social Learning Text Factor. The between-blocks instructor effect was significant for all six factors and all interactions were non-significant.(Table 5).

Table 4

STANDARDIZED DISCRIMINANT FUNCTION COEFFICIENTS

(λ Weights of 0.300 or Greater)

FACTOR I*	FACTOR II*	FACTOR III	FACTOR VI*
Practical Audiovisual Presentation	Instructor	Videotaped Lecture	Soc. Learning Text

VARIABLES AND WEIGHTS

Social	-.7298	Artistic	.6372	Infrequency	-.5667	Social	.6033
Unit Test	-.4622	Love & Affect.	-.5852	Unit Test	.4935	Self-cont.	.4747
Self-control	.3891	Acad. Achieve.	-.5163	Soc. Desira.	.4685	Masculinity	.5431
Acad. Achieve.	-.3879	Grade Point Average	-.3396	Grade Point Average	-.3561	Infrequency	-.3907
Masculinity	-.3531			Acad. Achieve.	.3488		
Intellectual	.3370						
Behav. Sci. Scale	.3228						

* Reverse signs to classify as high on a factor

Table 5

Between-Blocks Instructor and Interaction Between Instructor and Factor Scores

Multivariate Tests of Equality of Mean Vectors

(df = 144 and 1904.5657 for between-blocks and interaction)

	BETWEEN-BLOCKS INSTRUCTOR EFFECT		INTERACTION EFFECT, ELIMINATIN THE MAIN EFFECTS	
Factor	F-ratio	P	F-ratio	P
I	1.3205	<0.0082	1.0278	<0.3958
II	1.3176	<0.0086	0.9058	<0.7777
III	1.3233	<0.0078	0.9724	<0.5774
IV	1.3107	<0.0098	1.0617	<0.2970
V	1.3013	<0.0116	0.9563	<0.6290
VI	1.3097	<0.0100	1.0060	<0.4643

Discussion and Conclusion

Table 4 shows that different student characteristics can be used to distinguish high and low evaluators of four aspects of the course in educational psychology. Students who gave a high rating to the practical audio-visual presentation were found to have greater social interests, high test scores, more need for academic achievement and a tendency toward sponaneity as contrasted with over-control. Those who rated the instructor higher than their fellow students had higher grade-point averages, more need for academic achievement and love and affection, and little artistic interest or temperament. High raters of the videotaped lectures scored higher on the standardized classroom test; however, they had earned lower grade-point averages than the low scorers. Moreover, high scorers tended to have typical popular vocational preferences, and when questioned, tended to respond with a socially acceptable reply. Those students that evaluated the social learning text higher scored lower on the scales of social and masculine interests and self-control, and had typical, popular vocational preferences. A similar description may, of course, be delineated for low scorers on all four factors.

It is not our purpose to introduce complex interpretations of all significant findings until they are replicated; however, several points are worth noting about the variables on the Instructor Factor. When a need is met, or rather when an individual is reinforced, the applier of the reinforcement and others present may become conditioned reinforcers and the behavior, physical characteristics, and *role* of the conditioned reinforcers may develop S^D value (Staats and Staats, 1963). This was found to be true in an academic situation. Lott, Bright, Weinstein and Lott (1970) found that college students with a high need for academic achievement acquired significantly greater liking for a person who was present when they made high test scores than for a person

who was present when they performed poorly, whereas low-need subjects did not show a reliable difference in their liking for those two persons. Thus, the possibility exists that subjects who have a higher need for academic achievement and achieve higher grades see instructors as having greater S^D value and evaluate them accordingly. Students with higher Artistic scores are more original and unorthodox. They probably do not see the instructor as an actual or potential reinforcer for this need and would tend to rate him lower. Accordingly, students with more need for Love and Affection and who give a higher instructor rating are assumed to have found the appropriate reinforcement in this course.

One other significant finding should be noted. Students that scored higher on either the Audiovisual Presentation Factor or the Videotaped Lecture Factor had higher scores on the course examination. This supports Janes' (1964) unexpected discovery that a relationship exists between examination grades and preference for televised instruction.

The fact that student evaluation of course components is related to student characteristics provides educators with new strategies for understanding, evaluating and utilizing student feedback. Educators may now determine who is saying what about a given course. Moreover, a student may be assigned to sections of a course that are designed specifically to suit him. Further research seems desirable.

APPENDIX A

STUDENT RATING INSTRUMENT

NAME _____ INSTRUCTOR _____

TIME YOUR SECTION MEETS _____

Student Evaluation

As a teacher you will constantly be asked to criticize and evaluate educational programs, including your own. To help you develop this skill and to help us evaluate EDP 202, we are asking you to assess various aspects of the course. This information will, in turn, direct us in our attempt to adapt the course to your individual needs and interests. As outlined in the course requirements, a total of four points will be given to each student for completing evaluations of each unit. Please be candid. The way you respond will have nothing whatever to do with your grade. Your instructor will not see the results of your individual evaluation. He will only be informed of the group results and the fact that you have completed an evaluation form. Be honest! Remember that your responses will guide us in adapting succeeding course units to your interests. Thank you.

On a seven point scale, where 1 is an extremely low and 7 is an extremely high rating, circle the number which best fits your rating.

I. Monday Video Lecturers

1. How *useful* do you think the lecture material was?

Not useful 1 2 3 4 5 6 7 Very useful

2. How *interesting* was the material presented in the lecturers?

Not interesting 1 2 3 4 5 6 7 Very interesting

3. How well was the material presented in the lecturers?

Poorly 1 2 3 4 5 6 7 Very well

4. How do you rate the *effectiveness* of videos for present lecture materials?

Not effective 1 2 3 4 5 6 7 Very effective

Further Comments: _____

_____

II. Textbooks

5. How *useful* do you think the material in *Changing Classroom Behavior* was?

Not useful 1 2 3 4 5 6 7 Very useful

6. How *useful* do you think the material in *Educational Psychology* (Gibson) was?

Not useful 1 2 3 4 5 6 7 Very useful

7. How *interesting* do you think the material in *Changing Classroom Behavior* was?

Not interesting 1 2 3 4 5 6 7 Very interesting

8. How *interesting* did you think the material in *Educational Psychology* was?

Not interesting 1 2 3 4 5 6 7 Very interesting

9. How well was the material presented in *Changing Classroom Behavior*?

Poorly 1 2 3 4 5 6 7 Very well

10. How well was the material presented in *Educational Psychology*?

Poorly 1 2 3 4 5 6 7 Very well

Further Comments: _____

_____

III. Assigned Readings

11. How *useful* do you think the material was?

Not useful 1 2 3 4 5 6 7 Very useful

12. How *interesting* do you think the material was?

Not interesting 1 2 3 4 5 6 7 Very interesting

13. How well was the material presented in the readings?

Poorly 1 2 3 4 5 6 7 Very well

Further Comments: _____

_____

IV. Wednesday Films & Videos

14. How *useful* do you think the films & videos were?

Not useful 1 2 3 4 5 6 7 Very useful

15. How *interesting* do you think the films & videos were?

Not interesting						Very interesting
1	2	3	4	5	6	7

16. How well was the material presented by the films & videos?

Poorly						Very well
1	2	3	4	5	6	7

Further Comments: _____

_____

V. Tuesday & Thursday discussions

17. How *useful* do you think the discussions were:

Not useful						Very useful
1	2	3	4	5	6	7

18. How *interesting* do you think the discussions were?

Not interesting						Very interesting
1	2	3	4	5	6	7

19. How well were the discussions managed by the instructor?

Poorly						Very well
1	2	3	4	5	6	7

Further Comments: _____

_____

VI. At this point in the course, what is your overall impression of the value of the course?

No value						High value
1	2	3	4	5	6	7

VII. Instructor: Please check those adjectives which you think apply to your instructor (for Tuesday & Thursday discussions). *Remember that your instruments will not see the results of your individual responses on this form. He will only be informed of the GROUP response.*

1___Active	16___Enthusiastic	31___Responsive	46___Undependable
2___Uninterested	17___Cheerful	32___Suspicious	47___Ambitious
3___Secure	18___Cautious	33___Silent	48___Dependable
4___Stable	19___Anxious	34___Inconsiderate	49___Persistent
5___Open	20___Aggressive	35___OUtspoken	50___Preoccupied
6___Passive	21___Considerate	36___Alert	51___Disorganized
7___Withdrawn	22___Unresponsive	37___Irresponsible	52___Confused
8___Cooperative	23___Affectionate	38___Methodical	53___Systematic
9___Distrustful	24___Introverted	39___Controlled	54___Coordinated
10___Depressed	25___Kind	40___Organized	55___Indifferent
11___Confident	26___Lack of Humor	41___Uncoordinated	56___Thorough
12___Insecure	27___Unperceptive	42___Unsystematic	57___Unambitious
13___Moody	28___Irresponsive	43___Incomplete	58___Restless
14___Mature	29___Humorous	44___Unintegrated	59___Responsible
15___Trustful	30___Perceptive	45___Distractible	60___Cooperative

Further Comments: _____

_____

Any other comments about the course in general:

Thank you for your assistance. We will use this information to make whatever changes are necessary to adapt the course to your needs and interests.

APPENDIX B

Name _____ Student Survey Instructor _____
Time your section meets _____

To help us select learning materials geared to your needs and interests we are asking you to indicate on the following lists of readins and films those items which you would like to see included for future use. The readings most chosen will be included on the required reading list and films most chosen will be ordered for Wednesday and Monday sessions. REMEMBER, YOU ARE CHOOSING READINGS AND FILMS WHICH YOU WILL BE EXPECTED TO READ AND VIEW.

We are trying to contact all 202 students for this survey, so please include your name on this form so that we can check your name off the student list.

Readings: Please check ten (10) items

____ 1. The Authentic Teacher: Sensitivity and Awareness in the Classroom.
____ 2. The Reinforcement Menu: Finding Effective Reinforcements.
____ 3. The Technology of Teaching.
____ 4. A Human Relations Approach to Changing Tantrum Behavior in the Classroom.
____ 5. Personality Problems and Personality Growth in the Classroom.
____ 6. Teaching Teachers to Reinforce Student Participation.
____ 7. How Teachers Can Meet Childrens' Emotional Needs.
____ 8. Modifying Interpersonal Relations Through Modeling Procedures
____ 9. Maximizing Authentic Interpersonal Relationships in the Classroom.
____ 10. The Scientific Teacher: Controlling Behavior Using Social Learning Theory.
____ 11. The Facilitation of Learning Through Teacher Modeling Behavior.
____ 12. The Facilitation of Learning Through Warmth.
____ 13. Tactics to Eliminate Destructive Behavior in the Classroom.
____ 14. Love-Oriented Techniques for Improving Classroom Atmosphere.
____ 15. A Classroom Experiment in Fostering Mental Health.
____ 16. The Art of Teaching.
____ 17. Bringing Up Children Who Love Life
____ 18. The Use of Teaching Machines to Facilitate Classroom Learning.
____ 19. The Elimination of Tantrum Behavior in the Classroom Using Principles of Social Learning.
____ 20. A Classroom Experiment in Behavioral Engineering.

Films: Please check four (4) items

____ 1. Love in the Classroom
____ 2. Lollipops and Learning: Reinforcement in the Classroom
____ 3. Development of Self Control Through Social Learning
____ 4. The Child in Search of Self
____ 5. Meeting Emotional Needs in Students
____ 6. Controlling Emotional Behavior Through Reinforcement

Please check one of the following two

____ 7. Methods of Teaching the Mentally Retarded
____ 8. Behavior Shaping with the Retarded Child

APPENDIX C

BEHAVIORAL SCIENCE QUESTIONNAIRE

Please indicate agreement or nonagreement with the following quotations by writing yes or no in the margin.

_____ 1. "Although science may be able to understand and control some things in the physical world, it can never hope to understand and control human action."

_____ 2. "Since man has a soul, it is immoral to study him by scientific methods."

_____ 3. "The willingness of the scientist to reject traditional beliefs may lead to confusion and disorder."

_____ 4. "Since every person is different, it is impossible to establish scientific laws of human action."

_____ 5. "Scientific methods should be applied to human problems like segregation and poverty as well as to machines and modern conveniences."

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